

California Monthly Climate Summary September 2009

Weather Highlights

September 2009 was a warm and dry month for California. According to the Western Region Climate Center's [California Climate Tracker](#), the monthly average temperature was 70.6°F which is 3.5°F higher than the long-term average of 67.1°F. With a statewide average of 0.09 inches, precipitation for June was 19% of the long term average. September 2009 closes out a third water year of drought in California. Plots of statewide monthly average precipitation and temperature from the California Climate Tracker appear at the end of the summary.

September started out with mild temperatures for most of the state with warmer temperatures in the south. A cold front passed through the state at the end of the first week with rain limited to the north coastal region. The second week continued the mild weather with high pressure leading to warming as the week progressed. Another system moved through to close out the second week resulting in a lot of dry storms that sparked several wildfires. Week three began with a wetter cold front moving through the state with precipitation extending across the state. High pressure followed the front with temperatures rising to above normal by the end of the week. September closed out with a strong high pressure system yielding record high temperatures and dry conditions.

Preliminary records, reported on the National Weather Service Record Event Report, show that statewide there were 75 temperature records tied or broken and 15 precipitation records tied or broken for the month. Of the 75 temperature records, 56 were for new high maximum temperatures. Records were set over 18 days of the month. On September 13th and 14th, rainfall was recorded for the first time on these dates in San Francisco. Accumulation over the two days totaled 0.27 inches. Eureka set a new daily rainfall record on September 14th with 0.99 inches (the old record of 0.75 inches was set back in 1955) as did Modesto. Modesto recorded 0.20 inches which broke the 1939 record of 0.14 inches for this day. On September 17th, Eureka tied a 1927 record with a reading of 75 °F. On September 26th, Ukiah broke a 1967 high temperature record with a reading of 109°F and followed that up with a 107°F record the following day. The September 27th record was previously set in 1958 with a reading of 103°F. A plot of temperature records and precipitation records by month for water year 2009 are shown at the end of the summary. For the water year, 1218 temperature records were set and 115 precipitation records were set.

For the California Data Exchange Center's (CDEC) network of temperature gages used in this report, 75 stations recorded a minimum temperature below freezing in September while 96 stations reached or exceeded 100°F at least once during the month. Statewide extremes from the CDEC network of temperature gages are shown below. Also shown are the monthly average extremes from the CIMIS network. A table of regional average minimum, mean, and maximum temperatures from the CDEC and CIMIS networks is also shown.

Precipitation in September was below normal for all regions of the state. For the CDEC precipitation gages for September 2009, the largest amount of precipitation recorded was Henshaw Dam with 1.40 inches. This is 318% of the average precipitation for this station for September. At the other end of the spectrum, 37 stations recorded no precipitation for the month. For the CIMIS network, Big Bear Lake in San Bernardino County topped the precipitation charts with 1.64 inches for the month and 68 stations recorded no precipitation. Some CIMIS gages may show large precipitation totals if the gages are not covered during irrigation activities so care should be given to review precipitation data used from this network. The 8-Station Index for northern California precipitation recorded 0.15 inches in September with just 4 days showing precipitation. On average, 0.9 inches of precipitation is recorded for the 8-Station index in September. Statewide, the average precipitation for September was 25% of the long-term average based on the California Data Exchange Center (CDEC) gages. Precipitation percentages by region from the CDEC gages are shown in a table at the end of this document.

In October 2008, California joined the Community Collaborative Rain, Hail and Snow Network (CoCoRaHS). This group uses citizen volunteers to record rain, hail and snow data. The users enter the data online at the CoCoRaHS web site. The web site provides the opportunity to see spatial detail of rain and snow patterns in participating states. At the end of the first year of participation, California is getting close to 550 volunteers sign up spanning 50 of California's 58 counties. The county with the most volunteers at the end of September is Sonoma with more than 80 volunteers. For the month of September 6,759 reports were recorded for California. The largest daily rain total for CoCoRaHS- CA in September was in Humboldt County with 1.02 inches recorded on 9/14/09. Four hail reports were submitted in September for California with pea sized hail hitting Riverside on 9/1/09. To join CoCoRaHS or find more information, please visit <http://www.cocorahs.org>.

Snowpack and Water Supply Conditions

Water year 2009 comes to a close with water supply index categories hitting dry for the Sacramento Basin and below normal for the San Joaquin Basin. Water supply information for California can be found at http://cdec.water.ca.gov/water_supply.html. A historical listing of water year categories for both basins can be found at <http://cdec.water.ca.gov/cgi-progs/iodir/WSIHIST>. This completes the third year of drought conditions in California.

Drought Monitor and Seasonal Outlook

For September, the Drought Monitor showed no some intensification in the depiction of drought in California with the expansion of D2 in the northwestern part of the state. The maps for California for August 25, 2009 and September 29, 2009 are shown below. The Drought Monitor maps can be found on the National Drought Mitigation Center's (NDMC) website <http://drought.unl.edu/dm/>. These maps are largely a

reflection of precipitation and soil moisture deficit estimates. As of the September 29th depiction, the entire state of California is depicted in either D0 (abnormally dry), D1 (moderate drought) conditions, or D2 (severe drought) conditions. Maps are updated weekly.

The U.S. Seasonal Drought Outlook for September through November from NOAA depicts California with persisting drought conditions across the state based on climatology and an expectation for a dry fall. Updates are provided twice per month. Maps and information can be found at http://www.cpc.noaa.gov/products/expert_assessment/seasonal_drought.html.

ENSO Conditions and Long-Range Outlooks

The El Niño/Southern Oscillation (ENSO) is being classified as an El Niño pattern. Equatorial sea surface temperature anomalies for the tropical Pacific for July have been positive with values of 0.7°C in the Niño 3.4. The July through September 3-month running mean of the Ocean Niño Index (ONI) is 0.8 which is the third ONI value above the threshold to qualify for an El Niño event. For conditions to be classified as an El Niño event, five consecutive ONI values need to be above the threshold value of 0.5. Most forecast models have the tropical sea surface temperatures remaining in El Niño conditions through the early part of 2010. More information can be found at the Climate Prediction Center's web site:

http://www.cpc.ncep.noaa.gov/products/analysis_monitoring/enso_advisory/
Updates are posted weekly. The latest three month outlook (October through December) from NOAA indicates above normal temperatures for the entire state of California. For precipitation, below normal precipitation is forecast for the northernmost portion of the state with equal chances forecast for the rest of the state. Outlook plots and discussions can be found at <http://www.wrcc.dri.edu/longrang/>. General weather information of interest can be found at <http://www.noaawatch.gov/>. For anomaly information please see http://www.wrcc.dri.edu/anom/cal_anom.html.

Agricultural Data

Harvest for many crops was in full swing in September for California. Rice harvest progressed with reports of yields exceeding last year's values. Alfalfa, Sudan hay, sunflower, bean and safflower harvest all continued. In addition, grapes, apples, figs, peaches, plums, and nectarines were being harvested. Pomegranates were developing and sizing. Strawberry fields were being prepared for fall season berries. While navel oranges continued to develop and size, lemons and Valencia oranges were being harvested. A wide variety of vegetable crops were also being harvested including pumpkins, melon, squash, and cucumbers. Fire danger remained high throughout the month while cattle continued to need supplemental feeding. Transport of cattle from higher elevation pastures to winter pastures began. Fall beef calving was underway. Dairy herd reduction continued although at a slower pace. For further crop information see <http://www.nass.usda.gov/index.asp>

Other Climate Summaries

[California Climate Tracker](#) (new product of Western Region Climate Center)

[Golden Gate Weather Service Climate Summary](#)

[NOAA Monthly State of the Climate Report](#)

Statewide Extremes (CDEC)

High Temperature – 115°F (Buttercup, Colorado River Desert)

Low Temperature – 11°F (Upper Burnt Corral, Tulare)

High Precipitation – 1.40 inches (Henshaw Dam, South Coast)

Low Precipitation – 0 inches (37 Stations)

Statewide Extremes (CIMIS)

High Average Maximum Temperature – 105.1°F (Salton Sea East, Imperial County)

Low Average Minimum Temperature – 35.5°F (Alturas, Modoc County)

High Precipitation – 1.64 inches (Big Bear Lake, San Bernardino County)*

Low Precipitation – 0 inches (68 stations)

*Sometimes irrigation water from sprinklers gets counted as precipitation if the gage is not covered.

Tsunami

On September 29th at 10:48 am Pacific Daylight Time (PDT), a major earthquake occurred in the Samoa Islands region of the Pacific Ocean. Preliminary estimates of the quake magnitude were 8.0. A tsunami was generated from this quake that reached the coast of California. Amplitude of the tsunami ranged from 0.7 ft at Crescent City to 1.1 feet at Arena Cove. No damage was reported in California.

Statewide Precipitation Statistics

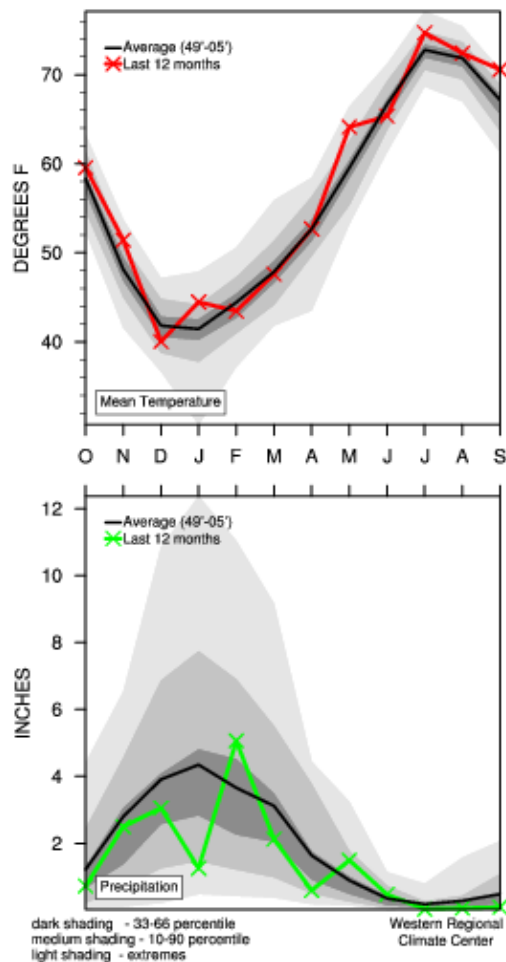
Hydrologic Region	Region Weight	Basin Reporting			Stations Reporting			% of Historic Average	
		Basins	Sep	Oct-Sep	Stations	Sep	Oct-Sep	Sep	Oct-Sep
North Coast	0.27	5	5	4	17	11	9	44.5%	80%
SF Bay	0.03	3	3	2	6	5	3	95.4%	93%
Central Coast	0.06	5	2	2	10	4	3	15.0%	62%
South Coast	0.06	5	5	5	15	11	10	16.9%	66%
Sacramento River	0.26	10	7	7	43	17	15	9.6%	87%
San Joaquin River	0.12	8	5	5	27	14	12	33.6%	86%
Tulare Lake	0.07	5	5	5	27	22	21	11.3%	79%
North Lahontan	0.04	6	4	4	14	6	5	8.1%	77%
South Lahontan	0.06	5	3	2	14	7	6	10.7%	100%
Colorado River	0.03	2	2	2	6	3	3	2.6%	66%
Statewide Weighted Average	1	54	41	38	179	100	87	25.2%	82%

Statewide Mean Temperature Data by Hydrologic Region (degrees F)

Hydrologic Region	No. Stations	Minimum	Average	Maximum
North Coast	27	38.4	65.0	92.8
SF Bay	19	49.5	69.5	91.0
Central Coast	35	49.9	66.8	86.4
South Coast	62	52.6	74.0	97.2
Sacramento	81	40.2	69.1	95.2
San Joaquin	71	43.1	69.1	90.7
Tulare Lake	17	31.6	62.6	84.0
North Lahontan	8	33.9	62.5	87.2
South Lahontan	21	38.0	66.5	86.5
Colorado River Desert	21	66.4	86.3	103.8
Statewide Weighted Average	362	41.5	67.8	92.1

California Climate Tracker Monthly Temperature and Precipitation Plots

California Statewide Last 12 Months



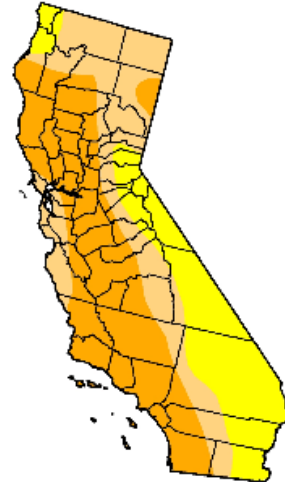
U.S. Drought Monitor

California

August 25, 2009
Valid 7 a.m. EST

	Drought Conditions (Percent Area)					
	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	0.0	100.0	72.8	42.8	0.0	0.0
Last Week (08/18/2009 map)	0.0	100.0	72.8	42.8	0.0	0.0
3 Months Ago (06/02/2009 map)	2.7	97.3	72.3	44.3	0.0	0.0
Start of Calendar Year (01/06/2009 map)	1.7	98.3	88.2	41.3	2.8	0.0
Start of Water Year (10/07/2008 map)	0.0	100.0	95.9	55.0	0.0	0.0
One Year Ago (08/26/2008 map)	0.0	100.0	97.7	43.1	0.0	0.0

Intensity:



The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements

<http://drought.unl.edu/dm>

U.S. Drought Monitor

California



Released Thursday, August 27, 2009

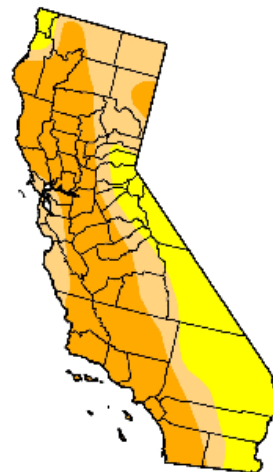
Author: Brad Rippey, U.S. Department of Agriculture

September 29, 2009

Valid 7 a.m. EST

	Drought Conditions (Percent Area)					
	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	0.0	100.0	73.4	45.8	0.0	0.0
Last Week (09/22/2009 map)	0.0	100.0	73.4	45.8	0.0	0.0
3 Months Ago (07/07/2009 map)	2.5	97.5	72.8	44.3	0.0	0.0
Start of Calendar Year (01/06/2009 map)	1.7	98.3	88.2	41.3	2.8	0.0
Start of Water Year (10/07/2008 map)	0.0	100.0	95.9	55.0	0.0	0.0
One Year Ago (09/30/2008 map)	0.0	100.0	95.9	55.2	2.1	0.0

Intensity:



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<http://drought.unl.edu/dm>

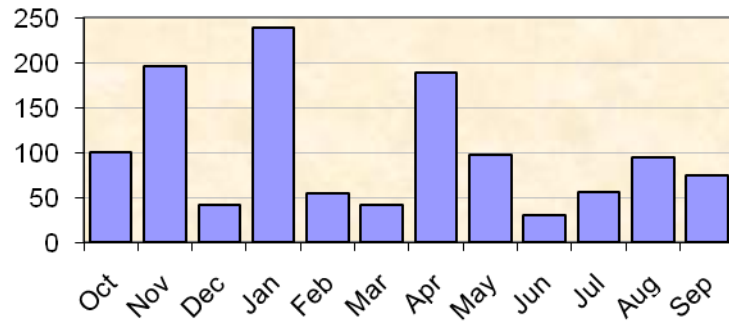


Released Thursday, October 1, 2009

Author: D. Miskus, JAWF/CPC/NOAA

Monthly Distribution of Temperature And Precipitation Records for Water Year 2009

**Temperature Records by Month for
Water Year 2009**



**Precipitation Records by Month for
Water Year 2009**

